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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/348,320	07/07/1999	KENNETH ALAN PIERONI	CHMP-102	5075

7590 05/17/2002

MORLAND C FISHER
2030 MAIN STREET SUITE 1050
IRVINE, CA 92614

EXAMINER

GARBER, CHARLES D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 05/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/348,320

Applicant(s)

PIERONI ET AL.

Examiner

Charles D. Garber

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 4-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 21-24 is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/22/2002 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieroni et al. in view of Gilles et al.

Regarding claim 1, Pieroni et al., henceforth referred to as "Pieroni", discloses a smoke producing apparatus and operation for detecting leaks in a fluid system including a smoke producing chamber 1 which appears in figure 1 to be closed, and a fluid supply 2 preferably of Citgo synthetic PAO oil, which is known to be flammable at 480°F.

Pieroni also discloses a heating grid 4 shown in figures 1 and 5 to be within the chamber, a gas inlet tube 16 with orifice 18 for blowing gas and fluid mixture against the heating grid energized by DC current (column 3 line 66 to column 4 line 10), an air outlet 14 for removing the exiting smoke (column 3 lines 16-23), and a source of air 25 which is a gas.

Pieroni et al. however does not expressly teach the gas is Nitrogen, which is inherently a non-combustible gas.

In the art of smoke generators used for producing challenge vapors the gas that is typically combined with a detectable vapor or gas is known as the carrier gas or propellant gas.

Gilles et al., henceforth referred to as "Gilles", explains that by using a propellant such as nitrogen a heat much higher than the flash point may be used to generate challenge smoke.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to advantageously use a propellant or carrier gas such as nitrogen in a smoke generator so that higher temperatures may be used to heat the smoke which will obviously produce more or denser smoke with out the danger of flashing.

The structural arrangement of Pieroni is identical to the arrangement of the instant invention and will inherently prevent dieseling within the closed chamber as in the instant invention when using nitrogen as a propellant advantageously taught by Gilles.

As for claim 3, Pieroni et al. further disclose an air inlet tube 16 shown in figure 1 and 5 extending through and above the fluid supply 2 as in the instant invention. The tube also blows a mixture of gas and fluid against the heating grid 4 as in the instant invention (column 3 line 66 to column 4 line 10).

Allowable Subject Matter

Claims 19, 21-24 are allowed.

The following is an examiner's statement of reasons for allowance: Prior art does not disclose or suggest as in claim 19 a method for generating smoke for use at a volatile, potentially explosive environment, comprising the steps of:

locating a supply of flammable fluid within a closed smoke producing chamber, said closed smoke producing chamber having a gas inlet to receive a supply of non-combustible nitrogen gas under pressure and a smoke outlet to permit smoke to exit said closed smoke producing chamber;

locating a heating element within said closed smoke producing chamber so as to extend in spaced alignment with said supply of fluid; supplying said non-combustible nitrogen gas under pressure to said closed smoke producing chamber via said gas inlet for blowing a mixture of said non-combustible nitrogen gas and said supply of flammable fluid against said heating element; energizing said heating element for

vaporizing into smoke said mixture of non-combustible nitrogen gas and said flammable fluid that is blown against said heating element, said non-combustible nitrogen gas preventing dieseling within said closed chamber and the possibility of an explosion at the volatile, potentially explosive environment at which the smoke will be used; and removing said smoke from said smoke producing chamber to the volatile potentially explosive environment via said smoke outlet.

In particular, the prior art relevant to leak detection and smoke generation fails to teach the use of nitrogen as a propellant or carrier gas in order to prevent pressure induced ignition or dieseling.

Claims 21-24 depending from allowed claim 19 are allowed for the same reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

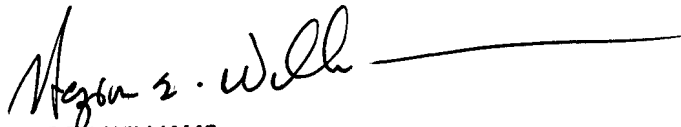
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references cited on the accompanying form PTO-892 are listed to show examples of state of the art leak detection and smoke generating apparatus and methods, which share one or more features in common with the instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (703) 308-6062. The examiner can normally be reached on 6:30 am - 4:pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7725 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

cdg
May 13, 2002


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800